

What is claimed is:

1. A method of filling a liquid crystal material into a liquid crystal display panel which comprises:

5 providing the liquid crystal display panel having an upper substrate, a lower substrate and a seal pattern having an injection port at a peripheral portion of the seal pattern;

preparing an open portion that elongates from the injection port to a side of the lower substrate;

10 providing a tray having a protruded portion corresponding to the open portion;

filling the tray with the liquid crystal material;

inserting the protruded portion into the injection port; and

15 introducing the liquid crystal into the liquid crystal panel through the protruded portion and the injection port.

2. The method of claim 1, wherein the open portion of the lower substrate has a wider width than the injection port, so that the liquid crystal material can be easily injected.

20 3. The method of claim 1, wherein the introducing of the liquid crystal is performed using capillary action.

4. The method of claim 1, wherein the upper substrate is smaller than the lower substrate.

25 5. The method of claim 4, wherein the lower substrate has a plurality of data pads and gate pads disposed on the lower substrate.

30 6. The method of claim 5, wherein the data pads and gate pads comprise a double bank arrangement having corresponding pads arranged at opposite sides of the lower substrate.

7. The method of claim 5, wherein the data pads and gate pads comprise a single bank arrangement having the data pads or the gate pads arranged along one side of the substrate, respectively.

5 8. The method of claim 1, wherein the seal pattern is printed in advance on the lower substrate.

*Sub. B2*  
10 9. A liquid crystal display panel comprising:  
an upper substrate;  
a lower substrate assembled with the upper substrate, the lower substrate having  
an open portion that elongates from an injection port to a side of the lower substrate;  
liquid crystal material interposed between the upper and lower substrates; and  
a seal pattern formed between the upper and lower substrates, the seal pattern  
having an injection port.

15 10. The liquid crystal display panel of claim 9, wherein the open portion of the lower substrate has a wider width than the injection port.

20 11. The liquid crystal display panel of claim 9, wherein the upper substrate is smaller than the lower substrate.

12. The liquid crystal display panel of claim 9, wherein the lower substrate has a plurality of data pads and gate pads disposed on the lower substrate.

25 13. The liquid crystal display panel of claim 12, wherein the data pads and gate pads are a double bank arrangement having corresponding pads arranged at opposite sides of the lower substrate.

30 14. The liquid crystal display panel of claim 12, wherein the data pads and gate pads are a single bank arrangement having the data pads or the gate pads arranged along one side of the substrate, respectively.

15. The liquid crystal display panel of claim 9, wherein the seal pattern is printed in advance on the lower substrate.

*Sub. B3*

16. A tray for filling a liquid crystal material into a liquid crystal panel, the liquid crystal panel comprising an upper substrate, a lower substrate, a seal pattern having an injection port at a peripheral portion of the seal pattern, and an open portion that elongates from the injection port to a side of the lower substrate, the tray comprising:

a body defining a cavity therein; and

a protruded portion extending from said body and corresponding to the open

10 portion of the liquid crystal panel.

17. The tray of claim 16, wherein the protruded portion has a terminal having a wider width than the injection port.

*Sub. A1*

18. a system for filling a liquid crystal material into a liquid crystal panel, the system comprising:

a liquid crystal display panel including:

an upper substrate;

a lower substrate assembled with the upper substrate, the lower substrate having

20 an open portion that elongates from an injection port to a side of the lower substrate;

liquid crystal material interposed between the upper and lower substrates; and

a seal pattern formed between the upper and lower substrates, the seal pattern having an injection port; and

a tray including:

25 a body defining a cavity therein; and

a protruded portion extending from said body and corresponding to the open portion of the liquid crystal panel.